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best included among those strange mesozoic conifers of whose structure and relationships so much is yet to be learned.—E. W. SINNOTT.

**The carpophore of Agaricaceae.**—An investigation of the development of the carpophore of several species of the Agaricaceae by BEER<sup>21</sup> brings still further evidence supporting the now generally accepted view that the hymenium of the Agaricaceae arises endogenously, and not exogenously in the manner first described by HARTIG. As to the relative priority of the differentiation of the pileus and the hymenial primordium, BEER finds that in *Hypophoma fascicularis* and *Clitocybe laccata* the pileus is differentiated first, while in *Armillaria mellea* the hymenium is the first structure to become visible. In this respect *Armillaria mellea* agrees with *A. mucida* as described by FISCHER, and with *Agaricus campestris* as described by ATKINSON. These forms show that the generalization of FAYOD, that the pileus is first differentiated in all cases, does not hold for all forms.—H. HASSELBRING.

**A paper atmometer.**—In an effort to obtain an instrument for the measurement of evaporation with temperature relations comparable to those of the foliage leaf, LIVINGSTON<sup>22</sup> has devised a paper cup atmometer, which is a modification of the Piche instrument. The advantages claimed for the new device are that as it contains a much smaller volume of water than the porous cup atmometer, it responds more promptly to changes in the external temperature. The surface of the paper cup may also be colored and the atmometer used for the measurement of light effects. This form of atmometer is likely to prove most useful in exact laboratory and controlled experiments, but will not replace the more durable clay cup for ecological field studies.—GEO. D. FULLER.

**Composition of soil water and plant distribution.**—The percentage of calcium and magnesium salts in solution in the soil water is believed by LANGERON<sup>23</sup> to give adequate explanation for many local peculiarities of plant distribution. To facilitate such studies he describes methods of water analysis which may be used in the field and laboratory, giving, with a minimum expenditure of time and effort, results sufficiently accurate to be related to differences in the composition of various plant associations. He has obtained promising results by applying his methods to the study of the bryophyte flora of the Bouche d'Erquy.—GEO. D. FULLER.

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<sup>21</sup> BEER, R., Notes on the development of the carpophore of some Agaricaceae. Ann. Botany **25**: 683–689. *pl. 1*. 1911.

<sup>22</sup> LIVINGSTON, B. E., Paper atmometers for studies in evaporation. Plant World **14**: 281–289. 1911.

<sup>23</sup> LANGERON, MAURICE, Valeur de l'hydrotimétrie en géographie botanique pour l'étude des accidents locaux. Bull. Soc. Bot. France **58**: 236–245, 266–273, 327–336, 421–428. 1911.